# Solid Wood Craft
# Utilization and Supply Prospects
# for
# Special Purpose Timbers in Canterbury

A dissertation submitted in partial fulfilment of the requirements for the Bachelor of Forestry Science degree.

by

David Crawley

School of Forestry

University of Canterbury

CHRISTCHURCH

1988

## ABSTRACT

The timber requirements of the professional craftsmen of high quality solid wood furniture, who are based in and around Christchurch are presented. The existing and prospective sources of these timbers are outlined.

Eleven furniture making establishments, employing fifteen full-time craftsmen[1], three wood turners and local enthusiasts and/or professionals involved in special purpose timber supply or usage were surveyed by interview.

The timber supply needs of the craftsmen were assessed.
The supply of these timbers was assessed.
The impacts of any evident supply restrictions were discussed.
Some options available to improve supply and/or to reduce those impacts were suggested. The information obtained was often varied and sometimes conflicting.

It was found that the low volume timber requirements of the craftsmen, coupled with their flexibility and ability to substitute timbers, to pay premium prices, and to control markets, serves almost to guarantee that the timber needs of this industry will continue to be met. There are however, opportunities available to improve timber supplies, which may become important if the industry continues to grow.


[1] This represents the entire industry in Canterbury as far as it was ascertained through the Canterbury Guild of Woodworkers and through numerous other contacts, except one craftsman who could not be reached at the time of survey.

## Acknowledgements

The compilation of the information which forms the basis of this dissertation, was heavily dependent on the co-operation of many craftsmen and other individuals or business representatives involved with the craft industry or concerned with S.P.T. supply. The names and addresses for most of these are listed in Appendix 1.

I owe a great deal to these people for their patience and for their infectious enthusiasm. I am very grateful for their openly informative and friendly assistance, and wish them well for the future.

## Contents

## Introduction

The subject and aims of this paper were inspired by a Canterbury United Council report written by Tilling and Clifton (1984) which in its summary drew attention to the convergence of two conflicting trends; the decreasing availability of Special Purpose Timbers (SPT's) and the increasing public appreciation of the qualities of solid timbers.

Photograph 1 - A stool by Gary Arthur at the new Cave Rock Gallery in the Arts Centre.

Photograph 2 - A chair crafted on more traditional lines by Ian Dawn; also in the new Cave Rock Gallery.

## Background

The size of the solid wood craft industry in Canterbury is small. In 1982 the number of people engaged in wooden furniture and upholstery manufacture in Canterbury was 1190 (ref. Department of Statistics 1982) but less than two percent of these were craftsmen such as those discussed in this paper, who produced high quality solid wood products. In 1983 36 000 $m^3$ of clean sawn high quality indigenous timber and 4000 $m^3$ of imported SPT's was used in Canterbury (ref. Tilling and Clifton 1984), probably less than 0.25% of this was used by the professional craftsmen.

Craft woodworkers form a small segment of the total special purpose species market, but the importance of their role is greater than statistics alone would suggest. With greater flexibility to respond to and experiment with new timbers and trends, their stock in trade is the ability to offer a wider choice of materials and design options than the manufacturers are able to offer. They can thus provide the grower with valuable first hand information on the timbers' quality as well as its acceptability to the public. Craft users can therefore set timber use and design trends (ref. NZ Forestry Council 1986). The high importance of Canterbury in the New Zealand woodcraft scene has been indicated by the establishment of New Zealand's first woodworkers guild and first woodcrafters magazine in Canterbury (ref. Touchwood No. 1, 1983).

The dominance of the Canterbury industry has been fostered to some extent by the relatively high availability of the timbers used. If the industry is to remain dominant the timber availability must be maintained. The composition of the solid wood furniture craft industry in Canterbury can be seen in Appendix 1. Most craftsmen work alone and almost all specialize to some degree in producing a certain type of product or style from their

favoured woods. The financial crash of 1987 may have fostered this specialization to some extent (pers. comm. Remi Couriard). High labour inputs into each product will continue to result in high prices. The industry can only survive then on the strength of its quality.

The larger furniture manufacturers do not compete directly with the craftsmen. They produce different quality furniture and use different woods. This is increasingly the case with dependence on pine plantations and custom wood (ref. Touchwood 11, Williams A.).

Being small, owner-operated, and individualistic, the craftsmen's establishments are run on a low budget and capital cannot easily be raised. This factor could significantly limit the future development of the industry.

There is always a downward pressure on product prices. Cheap Tiawanese solid wood furniture, though it doesn't compete directly against the higher quality crafted furniture, does reduce the price expectations of furniture buyers (pers. comm. Chris Thompson).

The time necessary for thought in the production of one-off pieces of furniture also hinders smooth cash flow. Remi Couriard gave an example to the Christchurch Press (pg. 22, 11.02.1987) "One ash coffee table took 30 hours to design and another 46 hours to make." It is important for the industry that time is spent developing new products. New products maintain the market's interest and give the craftsmen personal satisfaction.

Products are being sold predominantly to the upper end of the furniture market. Remi Couriard estimates his market to lie within the top 0.5% of the population by income. Chris Thompson identifies duel income

couples with no children and older couples with grown children as the main buyers of his furniture.

High quality furniture that does sell further down the marketplace tends to be less specialized or is smaller and thus cheaper. Ian Wilkinson for example sells one design stools and coffee tables priced between $100 and $200 (see Photographs 5 and 6).

All sales are made within the country to the domestic market or to visiting tourists. Tourists looking for New Zealand product's to take home often prefer smaller turned prices (see Photographs 3 and 4).

The market for crafted wood produce appears to be picking up after the stock market crash of 1987, which led to several canceled orders and a reduced demand. The retail trade has picked up 10% recently and as that market increases so too does the solid wood craft market. The durability of any one craftsman's market appears to depend on several factors, including the following:

A) The size and price of items - sales at the lower end of the market stayed more stable through the financial crash than sales at the upper end of the market.

B) The availability and accessibility of the items and the craftsman to the public.

C) The time of consideration needed to make a purchase - large commissioned items are often considered for several years before an order is laid. In times of financial hardships such projects are usually deferred.

Opinions on the present trend of market demands vary. To some extent opinions will depend on the influence of factors A, B, & C above, the craftmans experience in the market place, and possibly in some cases on competition from recently established professional craftsmen.

The industry expanded rapidly in the early 1980's in response to a growing public appreciation of the properties of solid wood furniture. This increase in appreciation appears to have occurred largely as a response to the Alternative Furniture Shows which have been held annually since 1983.

Colin Slade, member of the Crafts Council of New Zealand, suggests that the domestic market for craft products may be limited but that its limits have not been reached yet (ref. Touchwood, No.11, 1987). He expects demand to increase with a snowballing effect as produce sold attracts further sales.

Tilling and Clifton (1984) suggest that there is a latent demand for high quality solid wood products that cannot be satisfied as prices are prohibitive. The future state of the market will depend then on the future state of the economy.

Commissions account for about 90% of all sales made by the furniture market. Ian Wilkinson sells up to 50% through on the spot sales at his show room but he is an exception. The majority make a small percentage of exhibition pieces to attract highly priced commissions, which then account for the rest of their production. Ian Wilkinson sells cheaper pieces.

The Alternative Furniture Show is the most effective drawer of commission orders for many craftsmen. Todays craftsmen recognize the need to stay in the public eye and to demonstrate consistent high quality.

The first Alternative Furniture Show was held in 1983 to correspond with the furniture manufacturers and retailers show. $100 000 worth of furniture was bought and ordered (ref. Touchwood No.6). The show is described in the New Zealand woodworker (No. 15, 1988) as "a slick, very well promoted, highly professional show with a $30 000 budget, yet it's put together by a loosely woven, always about to unravel group, who assemble just for this one event. The 1988 show had up to 60 000 paying visitors over its three day run. Craft furniture is moving into the mainstream of New Zealand crafts and getting very good publicity." The show also provides exhibitors with public feed-back which enables them to develop and refine their market niches.

Some other methods of advertising and sale include:

I Craft Galleries. These have been more suited to the cheaper, more accessible products, especially those designed for tourists.

II Word of mouth is identified by some craftsmen as the most effective promotion means. Buyers will often talk themselves into buying more furniture from a craftsman from whom they have previously bought a piece or two.

III Advertisements in the papers, yellow pages or in handouts have been tried by many and abandoned by most as useless.

IV A personal approach is being used by Remi Couriard to solicit a few valuable executive commissions such as Bob Jones' office desk.

There are other opportunities that have not been used. Richard Raffan remarks (ref. Touchwood, No.14, 1987) "Few earn a good living from wood working. Many have a major struggle to survive even in a market which, if exploited properly, has the potential to have them laughing all the way to the bank". He goes on to identify the Corporate market, restaurants

and hotels, and the development of contacts with architects and interior designers, as viable market options.

Product specialization may win customers for some craftsmen. Colin Slade for example is identified with high quality chairs. Chris Thompson, not as specialized, maintains versatility is more important but admits that his "style" wins him customers. Versatility is vital but it could perhaps exist in a healthy framework of specialization of product type or style. Such specialization seems to be increasing as craftsmen develop their own market niches.

Within the solid wood crafting industry there are craftsmen of different calibre producing goods of different qualities of design and/or construction for different markets.

Craftsmen seem generally uninterested in marketing their products and will it seems only make a concerted effort to do so if their existence is threatened. When demand drops, one option is to change employment (this was done for a short time last year by one craftsman); another option is to adjust to stronger markets. Several craftsmen adjusted to a lower priced product mix; either deliberately like David Thurston who recently introduced deck chairs to his range, or as result of commission changes; for example towards orders of single chairs from Colin Slade. Dag Guest and Remi Couriard have responded to a drop in demand by attacking new markets. Remi has had some successes in the executive market as mentioned previously, and Dag has recently turned to Japan in an attempt to secure further commission sales.

Exporting is seen as unlikely for several reasons: the capital needed to establish export markets is high other countries have their own craftsmen, and it is easier to sell in your own country. Colin Slade asserts that exporting would only be possible through the retail market. Dag Guest may yet prove him wrong. The payment of a commission fee to retailers means some goods must fail to remain marketable and the craftsman would become restricted in what he could make. To support the larger retail market, and because returns per item may be reduced, the craftsman would need to increase production. His lifestyle would be denigrated. Richard Raffon's article (ref. Touchwood, No14, 1987) includes a suggestion that the craftsmen need only design and make a prototype to be produced in marketable quantities by lesser craftsmen, trainees perhaps.

The establishment of co-operatives may offer export opportunities (ref. Tilling and Clifton, 1984).

A traveling export show was suggested by the Overseas Trade Minister Mike Moore, at the 1988 Southern Style Alternative Furniture Show. He added: "This would be expensive but without the attempt world class items are restricted to their provincial market". In the meantime improved photographic records could be used to increase market awareness.

The public's respect for the crafting professionals is increasing along with their recognition of the crafted products' properties and values. The increased awareness in society of wood as a material for fine arts and crafts is noted also in Australia (ref. Touchwood, No.11, 1987). Colin Slade of the New Zealand Crafts Council, attributes the increased world popularity of handcrafts to the increased affluence of the western world; then remarks that despite the high quality of articles, the effect of crafts on the economy is

in doubt unless they can establish an overseas market (ref. Touchwood, No.12. 1987).

Several of the professional wood crafters interviewed entered the industry after becoming dissatisfied with other, often more financially rewarding and stable careers. Wood working, enjoyable in itself, can provide opportunities for artistic expression and the satisfaction of creating a long lasting product of visual and functional beauty. Craft woodworking is looked on as "a way of living more than a way of making a living" (Christchurch Press 03.11.1982, pg15), and is valued by the craftsmen as such. Mark Yetton comments further: "The reality is I'd still make the pieces if nobody paid anything" (ref. Touchwood, No.3). Such an extreme philosophy cannot be said to apply to all professional wood craftsmen, but an indication of the extent to which such attitudes prevail, and of the importance of their lifestyle, is given by the craftsmen's general attitude to marketing.

James Krenov, the guru of today's wood craftsmen, suggests that New Zealand craftsmen can look forward to being appreciated as long as they are content to live a modest craftsman's life and not expect to get a fortune for each piece they make. "This is not a vanity trip", he says, " it is about consistency, quality, and workmanship". Furniture makers following this course might only barely make a living, but "they will have friends, they will feel good about what they are doing, and they will be a good investment for New Zealand " (ref. Christchurch Press 11.08.1983, pg13).

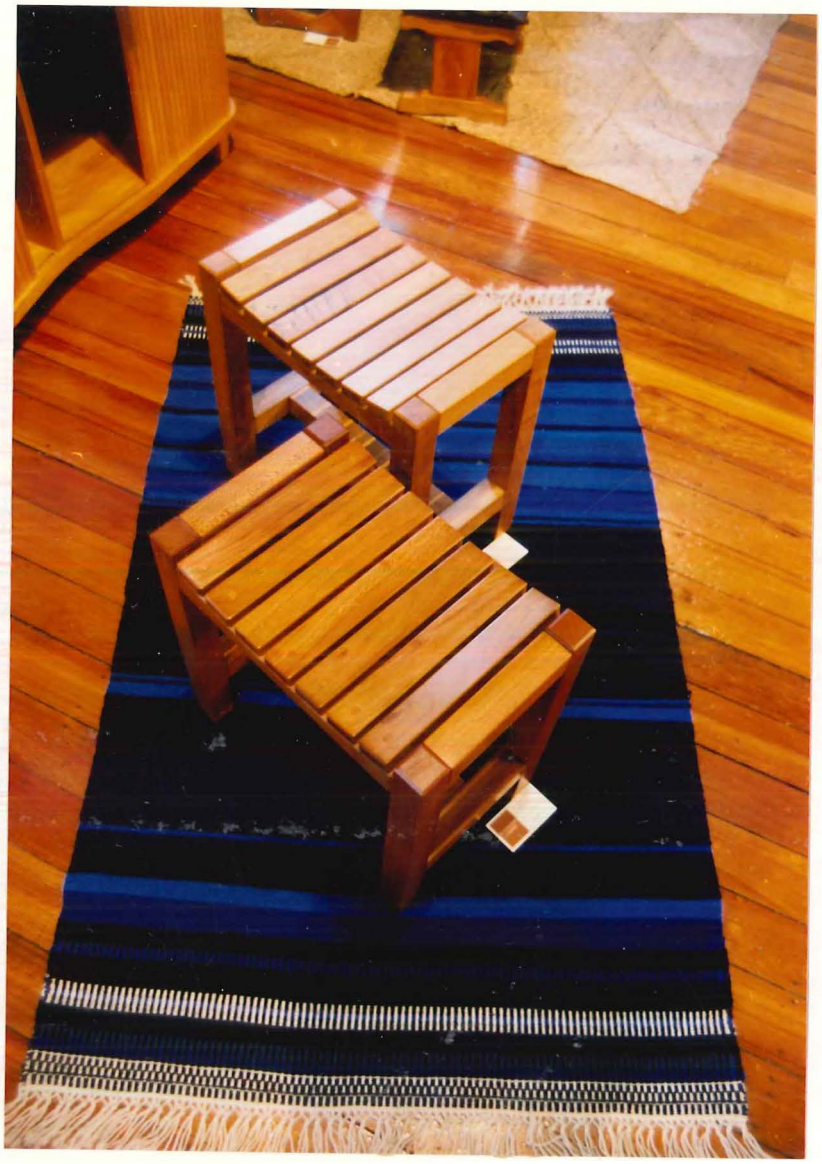
The artistic nature and patience of these high quality wood craftsmen does nothing to develop the potential that the industry possesses, though the innovative skills of the craftsmen are well developed in other ways.

The number of professional woodcraftsmen in Canterbury is increasing despite the recent economic downturn. Remi Couriard of the "L'Etacq" studio is presently training one pupil for full-time furniture crafting in Canterbury, and from 24 prospective Access trainees in 1989, he predicts 2 would establish themselves as professional small craft producers.

The Canterbury Guild of Woodworkers was established in October 1987 by 21 woodworkers of various backgrounds. The guild aims to promote a greater awareness of good wood work among the public, to provide a forum for the exchange of ideas, and to give support to members (ref. Touchwood,No.1, 1983). Present guild membership numbers about 200, most of whom turn wood as a hobby.

Photograph 3- The Guild of Woodworkers' stall at the Arts Centre Market displays products for sale that are suitable for gift hunters and tourists.


Photograph 4 - Sören Berger's work displayed for sale at the Woodcraft Gallery in the Arts Centre. The large Yew platter is turned from a base piece and is priced at $1100.



Photograph 5 - Ian Wilkinson sells many stools of this design which, in its incorporation of many small pieces of timber improves his overall wood use efficiency. The wood with the attractive grain seen in the lower stool is from Christchurch City Council plane tree. The upper stool is made of oak. Those are displayed at the Woodcraft Gallery in the Arts Centre.

Photograph 6 - An Ian Wilkinson coffee table incorporating a slate top surface.

# Section 1 : The Timber Supply Needs

## Section 1.1 Timber Usage of Furniture Craftsmen

The present annual timber consumptions of the surveyed furniture craftsmen are shown in Table 1.

The craftsmen have been positioned in the table according to a rough evaluation of the quality of their products and of their market position, with higher quality, up-market piece producers grouped to the left of the table. This grouping will vary with personal opinions and is also subject to craftsman skills and product development.

Three of the craftsmen have a full time assistant or students. These are shown in the table through their inclusion where appropriate, in the calculations of average wood usage.

Average wood usage over the range of craftsmen interviewed is 7.5 $m^3$/yr. Note that the wood usage of approximately 6 $m^3$/yr by the eleven higher quality craftsmen is significantly lower than that of the the other four craftsmen who use about 12 $m^3$/yr.

The accuracy implied in Table 1, to the nearest 0.25 $m^3$, has been maintained here to demonstrate at a reasonable level, the relative use made of the different woods. This level of accuracy has been included in the compiled wood usage subtotals and totals, to keep such estimated totals and any calculated values dependent on these totals as close as possible to their true value.

These values however, should not be lifted and used as accurate to the nearest 0.25 $m^3$. The majority of craftsmen interviewed do not keep accurate

records of their wood usage. The majority of values shown were obtained by mental recall in an interview situation.

The estimates are based on usage over the last few years but reflect present attitude. Variations in product demand and in wood availability will effect annual timber demands to some extent (see Section 1.3). An extreme example was given by Remi Couriard who in one or two months used 10 $m^3$ of kwila which was supplied by the commissioner of a very large book case.

Overall Total wood usage estimated is 110 $m^3$/yr. This is made up of: 48% natives, 35% locally grown exotics, and 17% imports.

Thirteen professional craft furniture makers surveyed in Canterbury in 1985, used approximately 100 $m^3$ of special purpose species, just over half of it indigenous species, the balance being mainly locally grown exotics, and a small amount being imported species (ref. NZ Forestry Council, 1986).

A comparative analysis of these two sets of results would not yield statistically significant results. The method used to carry out the survey, and the population sampled must be very nearly the same, but any differences in wood usage could be accounted for by variations included in the wood volume estimation process.

Bearing those limitations in mind however, it is possible to speculate that total wood usage now is comparable to, or may have increased over 1985 levels, and that usage of natives and/or locally grown exotics may be decreasing, with increasing use made of imports.

TABLE I

**Timber Usage of Furniture Craftsmen:**

(Units in $m^3$ / year)

| | Colin Slade | David Putland | L'etacq Studio | Gary Arthur | Stephen Laurie | Chris Thompson | Dag Guest | Ian Wilkinson | John Burn | Neville O'Sullivan | David Thurston | Subtotals | | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ash | 2.25 | | .25 | .25 | | .25 | | .25 | | 1.0 | | 4.25 | ) | |
| Elm | .25 | 1.0 | 9.0 | 2.0 | | 1.0 | 2.0 | .25 | | 1.0 | | 16.5 | ) | |
| Walnut | .25 | | 1.0 | .25 | .5 | .25 | | .25 | | | | 2.5 | ) | *Locally* |
| Oak | .25 | 2.0 | | .25 | | | | 1.5 | | 1.0 | | 5.0 | ) | |
| Sycamore | .25 | | .25 | .25 | | .5 | | | | | | 1.25 | ) | *Grown* |
| Fruitwood | | | 1.0 | | | | .5 | | | | | 1.5 | ) | *Exotics* 35% |
| Tasmanian Blackwood | | | | 1.0 | | | | | | | | 1.0 | ) | *38.0* |
| Macrocarpa | | | | .25 | | | 1.0 | | | | | 1.25 | ) | |
| Eucalypts | | | | | | | 1.0 | | | | | 1.0 | ) | |
| Other locally grown exotics | 1.5 | | 1.25 | .5 | | | | .5 | | | | 3.75 | ) | |
| Sapele Mahogany | | | | | 8.0 | | | | | 1.0 | | 9.0 | ) | |
| Fijian Kauri | | | .25 | | | | | 3.0 | | .5 | | 3.75 | ) | *Imports* 17% |
| Other Imported Species | | | | | | | .5 | | | 1.0 | 4.0 | 5.5 | ) | *18.25* |
| Matai | | | 4.5 | .25 | | | .5 | .25 | | | | 5.5 | ) | |
| Beech | 1.75 | | | .25 | .5 | .5 | .5 | | | | | 3.5 | ) | *NZ* |
| Tawa | | | 2.0 | | | | | | | | | 2.0 | ) | |
| Rimu | | | .25 | | | 1.0 | | | 25.0 | 6.0 | 7.0 | 39.25 | ) | *Natives* 48% |
| Kauri | | | .25 | | | .25 | 2.0 | | | | | 2.5 | ) | *53.25* |
| Totara | | | .25 | | | .25 | | | | | | .5 | ) | |
| Total for Establishment | 6.5 | 3.0 | 20.25 | 5.25 | 9.0 | 4.0 | 8.0 | 6.0 | 25.0 | 11.5 | 11.0 | 109.5 | | 100% |
| Average for each worker | | | 6.75 | | | | 4.0 | | 12.5 | | | | | |

## Section 1.2 : Timber Usage of Wood Turners

The volume of wood needed by the turners is practically impossible to estimate with any degree of accuracy (see Photographs 7 and 8). Their needs are for decorative pieces of wood of varying proportions. Decorative woods include yew and common fruit trees. In some cases yew trees are actively sought after, and an effort is being made by one turner to reduce the common wastage of garden yews, by advertising at his place of sale. Other decorative woods that are sought after include tree defects such as burls, crotch, head and base pieces (see Photograph 4)..

The amounts of wood used by turners are usually small. One professional turner suggested that one mature yew tree would more than satisfy his wood needs for one year.

Photograph 7

Photograph 8

These photographs taken inside Mark Piercy's workshop give an indication of the variety of timber pieces used by turners.

## Section 1.3 Factors Influencing Timber Requirements

The volumes and species of woods used by the wood-crafts industry are variable and flexible. When looking at the wood requirements of the industry it is important to consider the various factors that influence wood usage. Some of those factors are discussed below in sections 1.3.1 to 1.3.5. These factors are strongly interactive.

Turners have an even greater control than furniture makers do, over which species of wood they use in making their products because these products are not actually ordered on a commission basis. Nor have the turners been pressured to refine a market image as their versatility in supply and production allows them greater flexibility to follow markets.

### 1.3.1 Wood Availability

There are various levels at which wood availability will effect wood use. Obviously, when a wood is not available it cannot be used. Limitations are rarely placed on wood crafters by a true unavailability of wood, as most woods that are truly unavailable are not even considered for use by them. More often perhaps, especially at present, the limitation is imposed by price (see below).

Perceived wood availability does not always correspond to actual availability. The craftsmen in the industry by nature tend to work alone, and so though relations are amicable, communications may suffer. Secrets can be expected in times of competition. Walnut for example is considered by many to be in short supply but Colin Slade, based on the Banks Peninsular is able to secure walnut relatively easily.

Continuity of availability is considered important by most craftsmen. The larger furniture manufacturers rely on a continuity of supply to provide confidence and security to investors in forest resources and processing, and to foster market acceptance and demand expectations (ref. Farm Forestry Seminar Proceedings 1985). The craft industry utilizes a wide range of species in smaller volumes, but some continuity of supply is still important over several years, because markets that take some time to develop can be lost when the timber species used fails to remain available. For that reason specifically, Dag Guest does not use sycamore, chestnut, yew or cherry. Where possible he uses some species of eucalypts. These fast growing eucalypts are recognized by him as a suitable and potentially plentiful resource. Ian Wilkinson favours oak because he finds it readily available.

### 1.3.2 Wood Properties and Product Suitability

As dedicated artists and professionals, the craftsmen are heavily committed to using woods perfectly matched to the type and quality of the product to be made.

The wood choice is commonly based on its functionality (eg hardness required), and its finished appearance (eg colour and figure). Often this is subject to the buyers' taste, home decor and lifestyle.

### 1.3.3 The Role of Wood Price

The usual contribution of wood price to the total product price ranges over the industry from 15% - 30%. This compares to about 50% for most big

furniture manufacturers. The values vary according to the amount of work done on a product, and the amounts used and prices of the wood needed for the product. For example the cost of the wood in a large sapele mahogany table made by Stephen Laurie approaches 50% of the total job cost.

The following breakdown was provided by Remi Couriard. It is for a $21 000 dining table for Brierley's in Wellington. This commission was dropped because the final price was $1000 over budget.

| OPERATION | | COST ($) | % OF TOTAL |
|---|---|---|---|
| LABOUR, 98 HRS x $38 /HR | | 3798 | 18 |
| WOOD | | 3600 | 17 |
| SUBCONTRACTING | - STAINLESS STEEL | 7000 | 33 |
| | - LEG TURNER | 2000 | 10 |
| | - VENEER CUTTING | 1100 | 5 |
| TRANSPORT & INSURANCE ETC. | | 3502 | 17 |
| **TOTAL** | | **21000** | **100** |

This is not a typical example, but it serves to demonstrate the decreasing importance of wood costs in higher quality products.

The high cost of wood that may be encountered in some commission pieces, for example if teak were to be requested, do not overly concern the craftsman as such costs are handed straight to the client. Wood prices can

however become a significant deciding factor when wood is stocked by the craftsman some time prior to the commissioning or sale of the product. This is especially so when the market demand for products is as low as it is at present. In some cases expensive woods like Tasmanian blackwood and walnut are not being bought because of this problem.

Because most craftsmen are used to working on a low budget, and stock their own wood, they are naturally conservative in what they are prepared to pay for timber.

### 1.3.4 Market Demand for Woods

The volume of wood used depends on the market demand for products. This in turn depends on the state of the economy, and on the impact of advertising etc.

An increase in demand may be offset to some extent by the limited number and production capacitys of the craftsmen. Currently though, the industry is working below maximum capacity. A decrease in demand is tempered by the craftsmen's tenacity. To persevere with crafting, some have shifted to producing smaller, lower priced goods.

Though most works are commissioned, (commissions account for about 88% of the wood used), the role of the public in determining what woods are used by the craftsmen is relatively minor.

Most commissions are made through the Alternative Furniture Show or through word of mouth. In most cases the client has seen the

woodworker's available and preferred woods, and has approved the selection before coming to the craftsman.

Fashion in craft furniture is made through the cycle where a craftsman designs and then exhibits, the public provides feed-back, whereupon the craftsman develops a better basis upon which to redesign and exhibit.

The commissioning of a valuable piece of furniture involves close communication with the designer. In discussion the craftsman is the expert and so is frequently able to educate the buyer as to which of the available woods would most suit his/her requirements.

Contemporary craftsmen may have little control over which wood is to be used in a traditional piece. In such cases the wood desired is frequently of proved functionality anyway. Some customers have fixed ideas concerning which wood should be used, some of which may not be acceptable to the woodworker. Several of the woodworkers surveyed indicated that they have or would have, refused to produce unsound commissioned pieces. Colin Slade, for example does not make his chairs in rimu.

To some extent fashion cannot be controlled. A recent trend away from the cluttered country style home, to residences with near empty rooms built with clear sharp lines, has been noticed and responded to by the turners. The furniture makers are less versatile in their capacity to alter their resources and market identities to suit short term fluctuations. Their dependence on maintaining constant quality and attending only to longer

term market fluctuations has often been noted (ref. Frank O'Conner - Touchwood No.13, 1987, and NZ Forestry Council, 1986).

### 1.3.5 Woodworking Characteristics

Within the existing wide range of woods used, some are noticeably "tricky" to work with. Elm for example can "move" while it is being crafted. Some difficulties can also arise when poorly dried timber is used. Generally though, techniques are available to enable the utilization of any of the woods, and the pleasure of the product out-weighs any difficulty in the making.

## Section 1.4 The Role of Craftsmen Specialization

Craftsmen may specialize for a variety of reasons. Often it is in response to one of those factors discussed in section 1.3.

As a craftsman specializes, his dependency on one or two certain species grows.

Some examples of timber usage as attributable to specialization are evident in Table 1. Over half of the the total ash consumption is attributed to Colin Slade, a specialist in chair making; Stephen Laurie , a specialist in traditional and carved furniture uses the vast majority of the imported mahogany; and 97% of the rimu used is used by the three establishments producing the more affordable, lower quality products.

# Section 2 Existing Timber Sources and Their Limitations

## Section 2.1 Identification of Existing Timber Resources

The contributions from different supply sources of woods used by the furniture craftsmen, are shown, by species in Table 2.

Similarly to Table 1, the 0.25 $m^3$ level of accuracy has been retained to enable comparative analysis of the low volumes included. This does not necessarily reflect the proximity of the estimated value to the true figure.

**TABLE 2**

**Timber Supply Sources of the Furniture Craftsmen:**

(Units in $m^3$ / year)

| | | TIMBER SOURCES | | | | | |
|---|---|---|---|---|---|---|---|
| | | Guild of Woodworkers | Logs purchased by Craftsmen | Large Mills | Small Suppliers | Demolition | Imports |
| Ash | | 2.0 | 2.0 | | .25 | | |
| Elm | | 12.5 | 1.0 | | 3.0 | | |
| Walnut | | 1.0 | 1.0 | | .5 | | |
| Oak | | 3.0 | 2.0 | | | | |
| Sycamore | | 1.0 | .25 | | | | |
| Fruitwood | | 1.25 | .25 | | | | |
| Tasmanian Blackwood | | | 1.0 | | | | |
| Macrocarpa | | | .25 | | | | |
| Eucalypts | | | 1.0 | 1.0 | | | |
| Other locally grown exotics | | 2.0 | 1.5 | | .25 | | |
| Mahogany | | | | | | | 9.0 |
| Fijian Kauri | | | | | | | 3.75 |
| Other Imported Species | | | | | | | 5.5 |
| Matai | | | | 5.5 | | | |
| Beech | | | 1.5 | 1.75 | .25 | | |
| Tawa | | | | 2.0 | | | |
| Rimu | | | | 39.0 | .25 | | |
| Kauri | | | | .25 | | 2.25 | |
| Totara | | | | | | .5 | |
| **Subtotals** | $m^3$ | 22.75 | 11.75 | 49.5 | 4.5 | 2.75 | 18.25 |
| | % of Total | 21.0 | 11.0 | 45.0 | 4.0 | 3.0 | 17.0 |

## Section 2.2 Timber Supplied in Log Form

Wood supplied through the guild or through private sales is almost always bought by the craftsman in log form.

Timber bought and sawn from logs makes up about 30% of the surveyed craftsmens' total wood usage. For the craftsmen of higher quality goods, over 50% of the wood used is bought in log form.

The bought logs are sawn at Rolleston Sawmill to flitch or board sizes specified by the craftsman, who then completes the stacking and drying himself. One craftsman (Garry Arthur) has his own solar-kiln, but most dry their wood in an outside stack for some time, and then in a drier inside stack (see photographs 9-13).

A major problem facing craftsmen who buy wood in log form is the time needed to dry the timber to an acceptable low moisture content (about 11%). When he buys logs, the craftsman must predict his wood needs from six months up to six years ahead. Conversely, his dependence on his wood stack is limited to logs bought some time previously. Changes in wood needs however cannot always be predicted, for example if caused by an uncontrolled change in product demand. There is some risk attached to the purchase of logs. Often a log contains some hidden defect such a rot or metal contamination. In the case of some trees such as walnut, a high proportion of sapwood and little or no heart wood may render the purchased log completely useless. In the cost breakdown shown below, wastage was estimated to account of 50% of the log. When defect wood, shrinkage, and remachining for distortion (see photograph 13) and size requirements are

considered, it is quite possible that wastage may be closer to 60% or 70% or even more.

**Table 3**

**Cost of Log Conversion to Sawn Timber**

| CONTRIBUTING FACTOR | PRICE $/m^3$ | CUMULATIVE PRICE $/m^3$ |
|---|---|---|
| Purchase of tree | c 70 | 70 |
| Felling cost | 10 | 80 |
| Transport to mill (c. 50 km) | 25 | 105 |
| Milling to flitch form | 50 | 155 |
| Conversion waste of 50-60% | | 310 - 390 |

A cost in the region of $\$350/m^3$ must be paid from six months to several years in advance of the craftsman gaining any return from the wood purchased. One woodstack was valued by its owner at $ 14 000. The commitment of so much capital in such a small budget operation is quite undesirable. Steps have since been taken by the craftsman to sell some of this carried stock. One craftsmen is presently unable to replenish his wood stack due to current financial restrictions.

In addition to the cost of a wood stack, a significant amount of space is needed.

Log buying despite the hidden costs is still recognized as being the cheapest supply alternative.

One craftsman admitted to an increased satisfaction in completing his highly finished product from the most basic form of wood available; a tree.

The Guild of Woodworkers established a logging branch in the early 1980's to improve the availability of those timbers needed to satisfy their crafting needs (ref. Remi Couriard Touchwood No.1). Logs are bought and milled for guild members at the Rolleston Sawmill; in this way timber is supplied at cost price. In 1985 the guild handled 65 $m^3$ of wood, mainly locally grown English hardwoods (ref. NZ Forestry Council 1986). Current supply is about 50 $m^3$/yr; about 20 m3 of this is used by professional craftsmen, the remainder being bought by hobbyists (per. comm. John Roach).

The Guild logging branch played an important role in awaking craftsmen to the advantages of obtaining timber through log purchase, and in establishing a good working relationship between its craftsmen members and the Rolleston Sawmill.

The professional craftsmen are becoming increasingly able to find logs and negotiate the purchase themselves. Sales can arise through word of mouth and exhibition contracts, or sometimes through advertising. Eventually the craftsmen build up a standing resource that reflects their own timber needs.

The individual approach may include competitive advantages, as tree buyers are better situated to take the pick of what's available and can personally arrange the operation to ensure that costs remain minimal. It may be that these craftsmen derive greater satisfaction in discovering their own timber. Certainly there is an increasing awareness amongst the

craftsmen of the local timber supply capability. This may have developed from tree purchase attempts and may in turn prompt further attempts.

Photograph 9 - Timber drying outside Ian Wilkinsons workshop in Redcliffs are stickered in the form of the log.

Photograph 10 - Chris Thompson's flitch stack drying in the shade of his garden fence.

Photograph 11 - Chris Thompson in his workshop behind his home. Sawn timber dries to a lower moisture content in the corner of the workshop.

Photograph 12 - Dag Guests' preliminary drying shed

Photograph 13 Secondary drying to a lower moisture content is done in an enclosed tin shed before the timber is used by Dag Guest. Note the distortion in the unconditioned *Eucalyptus oblique* in the left-hand rack.

Photograph 14 - Dag Guests' workshop at Ferrymead.

Photograph 15- Dag Guest's "shorts" stack, where off-cuts are kept for future use to avoid wastage.

## Section 2.3 Local Supply of S.P.T. Logs

Local supply of logs, predominantly English hardwoods, accounts for all of the wood used in log forms. (see section 2.2.1) That is, it provides 30% of the overall timber usage and over 50% of the timber used by the eleven craftsmen of higher quality goods, some of whom may depend on locally grown trees for up to 90% of their timber needs. The present usage of locally grown sawn timber is about 35 $m^3/yr$, of which over 30 $m^3/yr$ is used by those eleven craftsmen.

The New Zealand Furniture Manufacturers Federation have frequently expressed a need to know what the estate available on a sustained yield basis for special purpose species in Canterbury will be in future years. Conflicting figures reduce their ability to plan for investments as they require an assured continuity of the raw material supply (ref. Farm Forestry Seminar Proceedings 1985, Appendix 4).

On the basis of Tilling and Clifton's report (1984) the Canterbury Region Forestry strategy (ref. Regional Forestry Strategy Objectives and Policy 1985) promotes the development of a 12 000 ha estate of S.P.T.'s to be established by the year 2010, at a rate of 400 ha/yr, and in equal proportions by the State, the Selwyn Plantation Board, other local authorities, and by the private sector.

The planting recommended was, in accordance with the furniture manufacturing needs, for 29% Tasmanian blackwoods, 30% macrocapra, and 50% ash eucalypts. (ref. Tilling and Clifton, 1984) With respective Mean Annual Increments of about 6.4, 11.5 and 12.5 $m^3/ha/yr$, a conversion rate of 47%, and 60-70% clean wood expected, the overall M.A.I. of the planned

estate was estimated to be 3.1. - 3.8 $m^3$ of clean sawn wood per hectare per year.

The realized planting rate in Canterbury is completely different from that proposed in 1985. The State and local authorities are not planting S.P.T.'s at all, and the private sector, judging largely from nursery outputs, is planting less than 40 hectares of managed woodlots per year (pers. comm. Ross Jaimeson). A variety of species including ash eucalypts, blackwood, and macrocarpa, are being planted with some small areas of more specialized timber trees such as ash and elm.

The NZ wide establishment of S.P.T.'s is also proceeding below the expectations outlined in the 1981 Special Purpose Species Policy (ref. NZFC 1986). Generally speaking, the policy targets for eucalypts planting have been achieved so far.

> "Private and State foresters accept the need for special purpose timber species establishment, but are reluctant to commit resources of land and finance to substantial programmes; particularly when the choice lies between relatively unknown, demanding species, and easily-managed, well-known and readily marketable radiata pine or Douglas fir. Progress towards achieving afforestation targets of the 1981 Forest Service Special Purpose Policy has been well below expectations, indicating a general lack of confidence in the pursuit of special purpose working circles and/or difficulties in justifying them. In Westland as in other regions, tree growers' apparent faith in utility softwoods such as radiata pine reflects a scepticism that speciality species will necessarily return sufficient revenue margins to compensate for the greater costs and efforts incurred in growing them."

The lack of confidence of Canterbury's state owned forestry in the profitability of S.P.T.'s, is mirrored in the attitude of Bill Studholme of the Selwyn Plantation Board. "The name of the game is economics and the only tree crop which pays is *Pinus radiata*." (ref. Farm Forestry Seminar Proceedings 1985).

The NZFMF argue that it is not satisfactory for Canterbury private enterprise to achieve timber estates greater than the level of commitment being made by the State (ref. Farm Forestry Seminar Proceedings, 1985). This stand may largely have been taken by participants in, or promoters of Canterbury industries which depend on S.P.T.'s, for political reasons. The political answer of the present Government of New Zealand, was to further demand of its forestry concerns the increased financial security that radiata pine provides.

Local authorities in the region don't have the expertise to grow S.P.T.'s (ref. Farm Forestry Seminar Proceedings, 1988). Only three local authorities in Canterbury employ professional foresters: the Christchurch City Council, the Selwyn Plantation Board, and the local authority embracing Ashburton. As recognized by Tilling and Clifton (1984), the majority of land suitable for growing S.P.T.'s in Canterbury is dissected and privately owned, and it is the private sector that has continued to develop the S.P.T. resource in Canterbury.

It has been suggested that the high prices involved in growing S.P.T.'s would be prohibitive to private growers such as farmers (ref. Farm Forestry Seminar Proceedings, 1984).

Extensive study would be needed to positively determine the supply potential of the existing local resource of S.P.T.'s . Confirmation of the existence of any woodlot does not guarantee its availability for logging, or even its potentially useful sawn timber output.

Using the annual increment estimates made by Tilling and Clifton (1984) of 3.1 - 3.8 $m^3$/ha/yr, the present annual planting rate of about 30 ha/yr increases the future sustainable yield of S.P.T.'s by about 100 $m^3$ every year. The species being advocated by Ross Jaimeson include eucalypts, Tasmanian blackwood, and macrocarpa.

Such plantations may not be run on a substantial yield basis, but present management practices for such stands, and the low volume demand expected for such high quality and highly priced logs, suggests that a steady, and probably sustainable, logging pattern will be maintained over all.

Eucalypts may be grown on a 30-35 year cycle, but European species such as oak, elm and ash can take 80 or more years to produce a trunk 60cm in diameter (ref. Christchurch Press, 06.07.1985, pg19). These trees then, will not be available for use until the years 2010 to 2060.

The local S.P.T. resource being utilized now by the furniture craftsmen, was established by the early settlers of Canterbury. There is some concern amongst the craftsmen surveyed, that there have not been such trees planted in the last half century. Whether the mature resource will continue to supply timber at the present level until the recently planted S.P.T.'s become available, is questionable. It is thought that such a level can be maintained overall, but that some individual species such as macrocarpa, cannot continue to supply such volumes as they supply now (pers. comm.

Ross Jaimeson). Most of the craftsmen interviewed were confident that they could continue to satisfy their own timber demands. Some timbers however were frequently mentioned as being of or becoming of, limited availability. These include sycamore, yew, chestnut, cherry, walnut and blackwood. Colin Slade, chair maker and member of the New Zealand Crafts Association, suggested that locally grown timbers could become overtaxed if the wood-crafts industry continued to expand in Canterbury.

**Section 2.4 Sawn Timber Supply**

Generally the furniture craftsmen interviewed rely on timber bought sawn and dried for 70% of their total sawn wood consumption (see Table 2). For the eleven craftsmen in the higher quality group, less than 50% of the wood used is bought this way. Some timbers such as West Coast natives are only available in sawn form. There are significant advantages for the craftsmen that encourage the use of timber bought sawn and dry. The wood need not be home dried, but can be used immediately; the amount of capital committed is reduced, and wastage through re-sawing is also reduced as the need to think some time ahead is avoided. The risk of wastage through hidden defects is passed to the mill when timber is bought sawn.

The craftsmen's use of sawn wood supplies is limited by the range and consistency of such supplies, and by the generally higher overall cost.

Some timbers however such as rimu, are available sawn at low cost and in large volumes. Most of the rimu available now is of poor quality and so is avoided by the higher quality craftsmen, but its present high availability and low cost, coupled with a persistent public demand for the wood, ensures the continued use of rimu by some craftsmen; especially those producing

products for the lower end of the market. Suppliers of sawn timber include: importers, large saw mills using the West Coast resource and smaller more opportunistic sawyers of home grown, salvaged, or bought logs. To a small degree, wood savaged from demolished buildings is also used. Occasionally a client will supply the timber necessary for a job.These sources, their advantages and their limitations, are discussed below in Sections 2.4.1 to 2.4.4.

### 2.4.1 Imported Timbers

The surveyed industry relies on imports for 18 $m^3$ (17%) of the total sawn timber consumption (see Table 1).

The use of imported timber is occasionally specified by a commissioner. Stephen Laurie uses about 8 $m^3$ of mahogany per year for reproduction pieces. Imports are often used, especially by the higher quality craftsmen as the first alternative to locally grown timber which is limited, for example by availability, price or by suitability. Ian Wilkinson who specializes to some extent in utilizing locally grown oak, has used over 12 $m^3$ of this wood and could not have gathered from that enough wood of the quality needed to craft one solid dining table top. As an alternative for such pieces he often uses Fijian kauri. David Thurston has recently been using imported kwila for deckchairs. The imported wood is as suitable as treated pine, and is cheaper. Imported woods appeal to the craftsmen as substitutes largely because they are consistently available in a range of piece sizes, dry and ready to use.

Not all imported wood are as cheap as kwila, the more expensive imported woods such as teak, are used only when a client is prepared to pay for it. Because craftsmen only use small volumes of imported timbers, they rely on the larger demands of furniture manufacturers and joinery to ensure a continued supply. Should the import demands of larger manufacturers decline, then importers may have to increase prices significantly for the reduced volume flow to be continued.

Tilling and Clifton (1984) draw attention to the difficulty New Zealand furniture makers may experience in continuing to pay world market prices for the imported timbers then go on to suggest that furniture manufacturers faced by a shortage of alternatives may survive on imported Australian hardwoods. This opportunity now appears to be closing as the eucalypt forests in Australia are being locked up for conservation reasons (ref. Farm Forestry Seminar Proceedings, 1985).

Imported timbers are available from many parts of the world. Supplies are generally decreasing, although increasing quantities of tropical hardwood plantation timber will be available from Pacific Island countries before the year 2000 (ref. NZ Forestry Council, 1986).

Jarrah Sydenham of Christchurch, import timber for furniture manufactures and joiners. They foresee no difficulties in continuing to supply imported timbers. Should some species become unavailable, they could open new resources, for example in South East Asia where there exist presently unused substitutes for Fijian kauri. Papua New Guinae has also been identified as a potentially large supplier.

Prices and price increases are continuing to favour the use of imported timbers as substitutes for indigenous species, a trend especially noticeable in Auckland.

**Section 2.4.2 Natives**

Most of the native timbers used are supplied by the larger sawmilling establishments, which are insensitive to the exacting needs of the craftsmen. Even the larger furniture manufacturers have difficulty in obtaining continuity of raw materials, because of their small volume usage and demands for top quality clear grades (ref. Farm Forestry Seminar Proceedings, 1986, Appendix 4).The present high costs for transportation within New Zealand compound the problem.

Craftsmen have frequently expressed some frustration in the past when native timbers which could have been used by them, were wasted by millers who were uninterested in the small scale crafts industry (ref. Touchwood, No.4 Nolene Brockenshire).

Canterbury is currently experiencing a glut of rimu; increased amounts of rimu of declining quality are being used for framing. A matching increase in the availability of the higher quality rimu could also have been expected (pers. comm. Norm Clifton), but in fact several of the higher quality craftsmen identified a shortage of good heart rimu A possible explanation is that the West Coast sawmillers may be dumping their stocks of poor rimu very cheaply to survive this financially poor period, perhaps as a result of increasing competition (pers. comm. Ross Jaimeson).

Of those millers spoken to in Christchurch, rimu logging contract expiry dates range from 1989 to 1998, at which stage the milling of beech and exotics will be increased as rimu sources drop right away.

The role to be played by Department of Conservation (DOC) in supplying native timbers is still unclear at this stage, and there may also be some pressure to restrict the use made of privately owned native forests.

The New Zealand Forestry Council (1986) concluded that native timber production on a national basis, "has been falling steadily and will drop rapidly about 1990. The main component of this is rimu. Many current users of rimu will have to find alternative materials".

There is an increasing number of chain-saw millers operating on the West Coast, who because of their high portability are able to mill previously cut over areas. These operations are on a small scale and though cost inputs may be high, lower overhead costs enable chain-saw millers to offer timber at competitive prices. The extent to which the cut over resource can be utilized may become limited in 5 - 10 years if scenic values are threatened (pers. comm. Ross Jaimeson).

Dr. J. Wardle, a national authority in the management of native beech, is managing his own area of beech forest in Canterbury, to include timber production. Sawn output presently ranges from about 7 - 12 $m^3/yr$.

## Section 2.4.3 New Zealand Grown Exotic S.P.T.'s

Generally sawmills are not involved in supplying special purpose exotic timbers, because the demand for these woods and the supply prospects of them are both on too small a scale.

Macrocarpa is presently being sawn, possibly because it's uses range beyond those of a strictly 'Special Purpose' species. Some high quality marcrocarpa timber may be available to furniture craftsmen sawn and dry, and in a range of dimensions. However it is unlikely that such an increased sawn output of macrocarpa can be sustained for long (pers. comm Ross Jaimeson).

For several years now, some Canterbury craftsmen have bought sawn S.P. exotic timbers from small supply operations, most often based outside the region. An example of such a supplier is Peter Waymouth, a Dunedin tree surgeon and woodworker, who mills and dries his own wood, and is able now after ten years in operation, to sell small amounts to Canterbury craftsmen.

Such small suppliers are limited in the volume, and in the range of sizes and species that they can provide. A Nelson based supplier has provided up to 20% of the elm used by the Canterbury craftsmen surveyed. Recent loads of elm have been rejected by craftsmen because of its poor quality. This failing in supply may have been caused by a reduced availability of elm trees in the Nelson region, but a more likely cause could be that milling was done to a range of sizes which is no longer in demand. The small supplier is subject to an exaggerated version of the problems that face the craftsmen when they stock their own wood (see Section 2.2.1), so the

costs of timber grown from small suppliers could limit the extent to which they are used.

John Roach of Christchurch crafts wood as a hobby. He has been heavily involved in the logging branch of the Canterbury Guild of Woodworkers, and may soon establish a small special purpose supply operation of his own in Christchurch. This prospective Canterbury supplier may improve efficiency in the supply of timber for the craft industry, but he too will be limited to using what log resource is available (see Section 2.2.2).

### Section 2.4.4 Demolition Timbers

Small amounts of demolitionkauri and totara have been used by the furniture craftsmen (accounting for less than 3% of the overall timber use). Its usefulness is limited by the presence of nail holes etc., and so as the prices have risen, the trend has been towards the use of recently sawn totara and Fijian kauri.

## Section 3 Impacts of Supply Restrictions

For the higher quality craftsmen native timbers make up less than 10% of the total wood used. The relatively low usage is probably more a result of craftsman preference than of a limited wood availability.

Often a timber species is under-rated in its country of origin. The use of Australian eucalypts for highly finished and decorative purposes was pioneered in New Zealand (ref. Touchwood, No.9, Raffan, R.). Similarly, visiting crafts people often comment on the underuse or misuse of rimu in this country.

One enterprising West Coast chain-saw miller has recently run advertisements of his timber supply, which were aimed at the Canterbury craftsmen, but he has had little success (pers. comm John Roach). This past and present lack of furniture craftsmen interest in using native woods when they are available, suggests that any impacts caused by a reduced supply, will be small.

The lower quality craftsmen surveyed are heavily dependent on rimu. Their use of rimu is a result of public demand for the timber, and of its continued availability in relatively high volumes at low prices. As a reduction in the availability of rimu seems inevitable, these craftsmen will have to adjust their products and markets.

The low use of native timbers, especially by the higher quality craftsmen has drawn some criticism from visiting craftsmen, who go further to suggest that a resultant lack of an identifiable New Zealand image may

reduce the international marketability of the product (ref. Touchwood, No. 12, 1987). Such a point is arguable, but should the furniture crafting industry expand to a point where high quality native woods were wanted for export, then the supply of these would very likely become a limiting factor.

The existence and lifestyle of the furniture craftsmen in Canterbury are not likely to be threatened by limitations in their timber supply. The versatility of the craftsmen (see Photograph 6), their ability to utilize alternative woods at relatively short notice, to create and maintain demands for new products, and their capacity for paying premium prices for the raw materials used, all combine to reduce the impact of a reduction in any one timber supply.

Some consistency in supply however, is highly desirable (see Section 1.3.1) and because some wood substitutes are limited ( for example, naturally dark, stable hardwoods may become increasingly difficult to find), the craftsmen will continue to favour the predominant use of timbers that are likely to remain available for some time. The structure of the furniture crafting industry and the range of products produced are therefore sensitive in some aspects, to those limitations in supply discussed in Section 2.2. .

Some of the changes in wood use that have been recognized or predicted by the craftsmen as caused by low or decreased timber availability, include reductions in the use of dark hardwoods, macrocarpa, and walnut. The use of sycamore, yew, chestnut, and cherry is already low as a result of inconsistencies in their supply.

There is confidence within the crafts and timber importing industries, that the present standard and volumes of timber imported to New Zealand

can be maintained though the sources may have to change. The quality and range of the imported timbers available, and the convenience and consistency of their supply may be increasing the use that craftsmen are making of these timbers. It is suggested in the conclusions of the report of the New Zealand Forestry Council (1986), that tropical hardwoods will have a continuing place in fulfilling many special purpose wood requirements.

Should the world market price of these imported woods increase drastically, furniture manufacturers may resort to using alternative woods, possibly natives or North Island eucalypts. Furniture craftsmen may or may not be able to afford the importation costs of small lots of timber, but if the furniture manufacturers are to continue production using high quality woods, then it is highly likely that furniture craftsmen will continue to use a small portion of that alternative resource developed by the manufacturers.

The comparatively minor role of wood price in the craftsmen's industry, gives the furniture craftsmen a competitive advantage over furniture manufacturers in the purchasing of timber. Timber costs account for about 50% of furniture manufacturers' total production costs, compared to about 15 - 20% for the craftsmen. The range of timber species used by the two groups are presently quite different. Those who could compete with furniture craftsmen in the buying of expensive logs include gunstock makers, whose needs are small and specialized, and veneer makers, who also are very selective in regards to the quality of logs that they will use.

New Zealand Veneers Ltd. are presently producing veneers in Canterbury, predominantly of pine for export. Their usage of timbers sought after by the craftsmen is small. Some species that could be used by craftsmen, such as macrocarpa, are not veneered in large volumes because demands for

them are low, and are likely to remain so, as the poor log supply prospects discourage development of the resource and future markets. Where a species such as elm or walnut are used by veneer makers or gunstocker makers as well as by craftsmen, then the volume of logs that meet the stringent demands of these competitors is likely to represent only a small fraction of the wide range of logs available and acceptable to the craftsmen.

Other competitors who may have some impact on the professional furniture craftsmen's log supply include small millers, who would then supply the wood in sawn form; part-time craftsmen, many of whom are turners with low volume demands; and other full-time craftsmen. Competition between craftsmen for timber has not yet occurred to any great extent. The nature of the present local log supply system has meant that the impacts of any such competition have not included increases in price.

The supplies of timber for the furniture craftsmen in Canterbury are not likely to be limiting, unless their own industry were to expand significantly in a direction that required the increased use of the local hardwood supply or of some native timbers.

The industry is continuing to expand; apparently in response to the appeal of the work and lifestyle rather than in response to product demand.

It could be speculated that an enlarged industry would need export markets dependent on native timbers, which then could be in limited supply, but more realistically perhaps, craftsmen versatility or the development of a marketable New Zealand or Canterbury 'furniture style', could provide a viable alternative to such a dependence on native woods.

Some craftsmen are presently unable to restock their wood stacks to the extent to which they desire. This limitation, which may have some impact on future furniture production has been imposed not by a limited availability of logs, but by the present national economic depression and the associated drop in product demand, coupled with the craftsmen's established timber purchasing system that for most, requires payment for timber some time before costs can be recovered.

All of the craftsmen indicated that they would remain dependent on their own wood stacks to some extent. Several suggested that should a reasonably reliable, more expensive supply of their needed woods become available in a sawn and dry form, then they would no doubt be better off using it in some cases, especially where speed was necessary.

The need to provide a reliable, functional selection of wood may be a contributing factor in the development of a craftsman's stable market niche.

Craftsman specialization in products made, or in timber species used, may have been encouraged by the economic climate as well as being a result of craftsmen's individual preferences. There are arguments for specialization, including improved supply efficiency and consistency, and improved market development and recognition etc.; and against specialization, including reduced flexibility. Should timber supplies become restrictive, further specialization might result.

# Section 4 Options Available to Improve Timber Supply and/or Lessen Impacts

This section presents some options seen by the author as possible future developments that may improve the timber supply situation for the solid timber furniture crafting industry in Canterbury. The implementation of these options may not be vital for the continuation in the industry, but an improved assurance of the continuation of supply would be desirable, especially if the industry continues to expand to its potential.

To some extent furniture craftsmen will continue to rely on the image projected by themselves, and by the furniture manufacturers, to inform the prospective suppliers of their timber needs. An effort by the Guild of Woodworkers to clarify the direction of the industry and to co-ordinate their timber needs with their timber supply options, could significantly improve the incentives for people to become involved in those timber supply options (ref. Touchwood, No.2, Hunter, L.A.G.).

Remi Couriard, craftsman and tutor, advocates product and market specialization, and improved communication within the crafting industry. Such improvements in the efficiency of the industry could in turn improve their efficiency of timber use. Ian Wilkinson for example has developed products that are efficient in timber use (see Photograph 5).

The utilization of a local supply of sawn and dry speciality timbers, could lessen some of the cash flow problems presently facing many of the craftsmen, while preserving fexibility in the industry by complementing each craftsman's more specialized wood stack. Such a supply would be

especially valuable when timber is required urgently. The addition of a full-time specialist wood merchant could lead to reduced wastage, so improving overall timber supply, or perhaps to the co-ordination link between the industry and the suppliers which has been missing in the past. The limitations of such a supply and the prospective involvement of John Roach in its establishment are outlined in Section 2.4 .

The wastage of native timbers has been notorious (ref. Touchwood, No.4). Use has been made recently of cut-over timbers on Banks Peninsular (ref. Christchurch Press, 03.11.1982, pg13), and on the West Coast the number of chain-saw millers (see Section 2.4 ) is increasing. The limited nature of cut-over resources will restrict the term, and may restrict the use made of this supply option.

Longer term management options, for example of beech (see Section 2.4 ) may be more attractive. There are options that exist for the larger scale management of native species on state and private lands; but this is a controversial issue and, the development of such opportunities may be restricted through political pressures.

Those lower quality craftsmen dependent on West Coast rimu may find beech timber to be acceptable, or alternatively they could turn to the cheaper imported timbers.

Imported timbers are likely to continue to supply an alternative or backup resource for the craftsmen. The dependence that craftsmen may develop on imported timbers represents a lost opportunity for New Zealand timber suppliers. The extent to which that dependence develops will be determined largely by the development and use made of the alternatives.

Of those alternatives the Canterbury timber resource is probably the most promising in the long term. The proximity of a larger timber using furniture and joinery industry in Christchurch, and the availability of suitable land in the region, support the argument for the growing of S.P.T.'s in Canterbury (ref. Tilling and Clifton, 1984). The use of locally grown timbers is preferable for continuity of supply (ref. NZ Forestry Council, 1986), and the locally grown resource is already widely recognized and used by the craftsmen. Some exotic hardwoods grow relatively quickly in Canterbury, and so may produce a superior timber (pers. comm. Norm Clifton).

All present planting is being undertaken in small areas and by private growers only. and the extent of future plantings will depend on the economic climate. The loss of Government planting incentives has reduced the planting rate ( pers. comm. Norm Clifton), but private plantings do continue. These are predominantly undertaken by tree enthusiasts or small estate owners (pers. comm Ross Jaimeson), though one furniture manufacturer is also planting trees to support his industry in the future.

Peter Smail suggests some forms in which Government planting incentives could be re-established (ref. Farm Forestry Seminar Proceedings, 1985).

State owned enterprises and local bodies may avoid S.P.T.'s because of their projected low profitably when compared to radiata pine (see Section 2.3). There is however some evidence to suggest that S.P.T.'s may be as profitable to grow as radiata pine; or even more so.

Cavana and Glass (1985) have carried out an economic analysis of selected S.P.T. regimes for New Zealand. Their results show real pre-tax internal rates of return comparable to but generally less than radiata pine with sensitivity analyses for low and high price scenarios.

Stumpage return for these analyses were based on 'expected' price ex-yard, Wellington. This basis for evaluation was not considered to be completely satisfactory by the New Zealand Forestry Council (1986) who felt that world prices should be used, in which case prices may be high enough to achieve a Rate of Return for some longer rotation S.P.T. crops, comparable to that of radiata pine.

An example is given in the Farm Forestry Seminar Proceedings (1985): blackwood priced at rimu rates would return substantially less than radiata pine, but when imported Australian blackwood prices are used the comparison is favourable.

The craftsmen in Canterbury have resorted to imported timbers as their first alternative to an occasionally insufficient and declining local resource. In the future they will be well placed to afford the prices necessary to promote the planting of high quality S.P.T.'s. There is still considerable risk involved however in the planting of S.P.T.'s; the New Zealand Tree Grower (May 1986) describes it as "an act of faith" but adds that "the industry follows the resource".

There are other, non monetary reasons for which S.P.T.'s may be planted. These may be secondary to the profit or timber production motive; or primary, as in many cases where timber yields may not even have been planned at all. Such reasons may include shelter, visual amenity, or nut

crops. Many trees are now being planted as a way of utilizing estates bought as retreats or investment. An enthusiasm for trees bordering on fanaticism can develop (pers. comm. Ross Jaimeson).

Some local authorities may have scope within their objectives to grow S.P.T.'s. Bottle Lake Forest has objectives of protection, production and recreation that could accommodate S.P.T. production . The Bottle Lake soil and climate however make it unsuitable for S.P.T.'s. Mary Duncan Park has been identified as one area where S.P.T.'s could be grown in a plantation for timber and amenity. Other local authorities may be disadvantaged by a lack of forestry expertise (ref. Farm Forestry Seminar Proceedings, 1986), and tax concessions are of no value to them.

The Christchurch City Council has for some time now been salvaging timber from its damaged or felled amenity trees, often for use in Council projects, or for sale by tender to the Guild and to individuals. Returns for timber sold by the Council have not always been good, and are sometimes on a par with returns for firewood.

As amenity values are of primary importance, the timber from the Council's trees only becomes available when the tree has deteriorated to a level where the amenity value is reduced, or if the tree has become dangerous. Usually the tree will be salvaged before the wood becomes useless.

The Council has a large number of trees in its parks and gardens and along its streets. These include many oaks, which when overmature become subject to wind damage; plane trees, some alongside Fitzgerald Avenue and in Cranmer Square will need removing in a few years; elms, which are

subject to gale damage; some good ash trees; and a range of other less suitable species including heavily limbed European beeches. Replacement plantings are similar, with plane trees, English oaks and black poplars having some possible future use for timber.

Growing trees for amenity does not always produce good timber. Single specimen trees especially are usually left unpruned though in some situations a group of pruned straight stems can be attractive. Metal contamination is always a risk when timber that was grown in a public place is machined.

With a new amalgamated City Council there may be more opportunity to reserve lands and to manage trees in a way more suitable for timber production.

*Robinia acacia* is a hardwood species with an interestingly figured timber and good amenity values. It grows fast even in dry conditions, and has been managed successfully in Hungary over a short, 25 - 30 year rotation. It's high colrific value could allow damaged timber to be salvaged and used as a desirable firewood. Such a species may be used on Council lands in the future (pers. comm. Walter Fielding-Cotteral).

> "The private sector, and in particular farmers, have a crucial role to play in the future of forestry in Canterbury. Farmers are the principal landowners in the areas being considered suitably for forestry. Greater emphasis, therefore, need to be given to integrating forestry and farming and to joint ventures involving farmers."
> (ref. Farm Forestry Seminar Proceedings, 1985)

Joint ventures between tree growers and the Christchurch City Council might also be possible in the future.

Information on the advantages and workings of joint ventures is given in several articles published in the New Zealand tree grower (Nov, 1983; McKenzie, Feb 1984; Buist, Aug 1984; Parsons, Feb 1985).

Several craftsmen have expressed concern that the resource they are using is not being sufficiently replaced. It may not be inappropriate then for those craftsmen to become growers, if not individually, then as a group. The Canterbury Guild of Woodworkers could benefit from such an undertaking in various ways. They would create and promote an assured timber supply in accordance with their own needs, with which they are the most familiar; They may also gain some satisfaction in increasing their role in the production of furniture back to the planting and managing of the tree, while saving the costs of importing timbers; or make money through log sales.

As a low budget organization the guild might best consider a joint venture scheme, so avoiding the cost of land. Lucy Wyburn of the Ministry of Forestry has developed the basis of a joint venture scheme that might be appropriate, where land on Banks Peninsular could be planted in S.P.T.'s and developed as a rental holiday home site to provide some intermediate returns. Alternatively, as a long term organization the guild may be suited to take part in a joint venture with the Christchurch City Council.

Even if uninterested in growing trees itself, the guild could encourage the establishment of S.P.T.'s by broadcasting their needs and by paying attractive prices for logs.

# Conclusions

## Timber Needs

The sawn timber requirements of the surveyed Canterbury solid wood crafted furniture industry is in the region of 110 $m^3$ per annum. That total is made up of: 48% by native species, predominantly rimu, 35% locally grown exotics, predominantly European hardwoods, and 17% imported timbers.

The industry can be divided by product 'quality' or market status, into two groups that display different timber use patterns. The eleven higher quality craftsmen, each use, on average, about 6 $m^3$ of timber per annum. This consist mainly of locally grown exotic hardwoods. In contrast the four producers of furniture in the lower market range, each use, on average, about 12 $m^3$ of timber per annum; and together account for over 96% of the rimu used by the surveyed industry while making comparatively little use of imports or locally grown S.P.T.'s.

Largely it is the craftsmen who determine which species of timber are to be used in the high quality furniture; the choice depending heavily on his sense of the timbers functionality, and on tradition. The cost of the sawn timber usually accounts for 15 - 30% of the finished product price and so

timber price plays a relatively low role in determining which timbers are used. Craftsmen favour the use of timbers where some continuity of supply is assured as this improves market stabilization. The craft furniture in Canterbury is expanding, but slowly at present.

**Timber Supply, Restrictions and Impacts**

Native timbers are not much used by the higher quality craftsmen, but rimu is heavily relied upon by a few craftsmen supplying the lower end of the market. Predicted reductions in the supply of native timbers, particularily of rimu in the next 10 to 15 years, will have an immediate and large impact on those few craftsmen, who will have to find moderately priced substitute timber supplies. Most of the craftsmen though will not immediately be effected by the expected reductions in the availability of native timbers.

The craftsmen's dependence on imported timbers may increase. The advantages of using imported timbers include their consistent availability in a range of sawn dimensions, their dry state which allows immediate use, and their often superior quality.

The craftsmen of higher quality furniture in Canterbury are heavily dependent on the local exotic hardwood resource. It is thought that the existing resource in Canterbury will be adequate to supply the craftsmen at

the current level of use, at least until newly planted S.P.T.'s become available. Should the industry continue to expand though, an increased dependence of craftsmen on imports may be necessary. The availability of some timber species including macrocarpa and walnut may be significantly reduced in the short or medium term.

The Forestry Corporation and the local bodies are not planting S.P.T.'s, but the rate of planting by the private sector, low though that is, should be sufficient to ultimately supply the needs of the furniture craftsmen, who are competitively well situated to dominate the purchase of that supply.

The low volume of timber required by the craftsmen coupled with their flexibility and ability to substitute timbers and drive markets, serves almost to guarantee that their timber supply needs will continue to be met.

**Options Available to Improve Supply and/or Lessen Impacts.**

Some development of those options available to improve supply may not be vital, but the development of a more assured supply, the reduction of wastage, and improved supply efficiency could bring advantages to the industry, especially if it is to expand to its potential.

Options may include the involvement of the Guild of Woodworkers in the tree growing or in publicising their needs. Efficiency in supply and communication between the craftsmen and the tree growers may improve if a small specialized private supply service is developed in Christchurch. The planting rate of S.P.T.'s in Canterbury may increase with an improved economic climate or if the monetary returns for such crops are demonstrated to be similar or greater to those of radiata pine. S.P.T. planting could become more widespread with the further development or increased acceptance of multiple use forestry and joint venture schemes.

# List of References


Cavana, R.Y. and Glass, B.P. 1985

"Economic Analysis of Selected Special Purpose Regimes", NZ JL. For.Sci. 15 (2) : 180 - 194

Department of Statistics

Census of manufacturing, series C No.3

Manufacture of Wood and Wood Products, including Furniture 1981 - 1982

"Development Directions For Industry in Canterbury ", 1983

compiled by the Secondary Industry Advisory Group for the Canterbury United Council. Report No. 288

"Forestry Joint Ventures" ,1984, Canterbury United Council

Report No. 306

Farm Forestry Seminar Proceedings, 1985, on production forestry and forest industry strategy for the Canterbury region.

Canterbury United Council Report No. 337

Fry, G. 1983

"Eucalypts in New Zealand"; a Position Report

NZ. JL. For. 28 (3) : 394 - 411

Gleason, C.D. 1986

Tasmanian Blackwood - Its potential as a Timber Species. NZ.JL.For. 31 (1) : 6 - 12

Implications of Canterbury Region's Forestry Strategy, 1984

" Indicators for Consistent Local Authorities of the CUC".

Canterbury Council Report No. 317

New Zealand Forestry Council, 1986

" Utilization and Marketing Prospects for Special Purpose Species".

Working Paper No. 8

" New Zealand Woodworker, the", 1988

continuation of the "Touchwood" magazine

Pers. comm.: Contributors of information through pers. comm. are listed in Appendix 1

Tilling, A.J. and Clifton, N., 1984

" A Strategy for Special Purpose Timbers for the Canterbury Regions".

Canterbury United Council Report No. 313

" Touchwood" Christchurch based magazine spanning the years 1983 to 1988, now "The NZ Woodworker"

# Appendix 1

Persons who provided Information through personal communication

**1. Craftsmen Interviewed.**

**Furniture makers**

Garry Arthur - maker of sculptured furniture in native and exotic timbers, to his own designs. Special interest in sculpture and furniture for public spaces such as foyers, reception areas, offices, etc. Address: 63 Rose Street, Christchurch 2 Phone 325-668 (A.H.)

John Burn - specializes in reproduction colonial and Edwardian furniture and contemporary heart-rimu products. Address: 29 Like Street, Christchurch. Phone 842-660

Ian Dawn - furniture of clean contemporary style. Address: 90 Waltham Road, Christchurch 2. Phone 657-032
(Not available at the time the survey was carried out)

Dag Guest - designer and maker of all types and styles of furniture, mainly in solid wood. Individual commissions as well as small runs undertaken. Address: Ferrymead Park Furniture, Moorhouse Township, Ferrymead Historic Park,
Christchurch 2. Phone 849-879

Stephen Laurie - maker of traditional furniture specializing in carving and intricate inlaid veneers. Address: Kaiapoi Mill, Ranfurly Street, Kaiapoi. Phone 27-8195

"L'etacq" Studio - run by Remi Couriard, consists of a team of craftsmen aiming to achieve quality and innovative new forms, in limited editions. Orientated towards simplistic styles. Address: 20 Buchan Street, Christchurch. Phone 667-946

Neville O'Sullivan -versatile cabinetmaker. Will make most styles of furniture to customers requirements. Also repairs existing furniture. Address: 113 Stanbury Avenue, Christchurch 2. Phone 34-056

David Putland - traditional English styles. Address: 21 Bellamy Avenue, Christchurch 7. Phone 883-443

Colin Slade - chairmaker and designer of individual furniture in traditional and modern form. Chairs, tables, desks, bookcases, etc. , meticulously made to order, using only superior hardwoods. Address: Barry's Bay, R.D. Akaroa. Phone (05145) 748

Chris Thompson - designer-maker of New Zealand colonial furniture. Specializing in individual pieces, made to order. Clean lines and attention to detail are features.
Phone 894-584

David Thurston - maker of New Zealand colonial furniture specializes in heart-rimu. Scotch chests, dining suites, bedroom furniture, rolltop desks and sideboards. Address: Robinson's Bay, R.D. Akaroa. Phone (0514) 7499

Ian Wilkinson - maker of fine economic furniture in contemporary styles, with emphasis on clean lines, using a variety of timbers including oak. Address: 99s Main Road, Redcliffs, Christchurch. Phone 843-534 (A.H.)

**Woodturners**

Sören Berger Phone 881-004

Charles Boyle Phone 857-627 (A.H.)

Mark Piercy Phone 849-567

## 2. Other Persons who Provided Information

Boyle, C.- director of the Woodcraft Gallery

Cameron, G. - Head Forester of the Christchurch City Councils Bottle Lake Forest

Clifton, N. - M.o.F. employee with interest in S.P.T.'s and author on the subject

| | |
|---|---|
| Jaimeson, R. - | M.o.F. employee, heavily involved with S.P.T. management on a consultation and personal basis |
| Fielding-Cotteral,W.- | Arboreal culturalist for the Christchurch City Council |
| New Zealand Veneers- | Reid Mallison - log buyer. Address: 60 Waterloo Road, Sockburn, PO Box 11 046, Christchurch. Phone 499-149 |
| Roach, J. - | Secretary of the Canterbury Guild of Woodworkers, previous logging branch manger, prospective merchant for special craft timber management in Canterbury |
| Wyburn, L. - | M.o.F employee, has developed some joint venture proposals |

Various millers and importers also have contributed . Most notable of these are:

Jarrah Timber concerning importers and Les Cuthbertson of the Rolleston Sawmill concerning local S.P.T.'s.